

REMARKS

Reconsideration and allowance of this application, as amended, is respectfully requested.

This Amendment is in response to the Office Action dated June 27, 2006. By the present Amendment, each of the independent claims has been amended to clarify the invention for reasons which will be discussed below. In addition, new dependent claims 29-32 have been added to define further features of the present invention, as will also be discussed below.

Reconsideration and allowance of amended independent claims 8, 10, 19, 21, 27 and 28 over the various rejections set forth in the Office Action based on Lenz (USP 5,534,751), Ohmi (USP 5,272,417), Lenz (USP 5,569,356), Steger (USP 5,494,523), Ogasawara (JP 07-135200), Koshiishi (USP 5,919,332) and Lenz (USP 5,609,720) is respectfully requested. With regard to this, it is noted that each of the independent claims 8, 10, 19, 21, 27 and 28 has been amended to specifically include the feature that the discharge confining means serves the function of "increasing plasma density in the vacuum processing chamber." This feature is based upon the disclosure found in page 29, line 7 *et seq.* of the Specification, which states:

"A discharge confining ring 37 is provided in the processing chamber 10 to increase plasma density and make the reaction inside the processing chamber uniform."

As such, each of the independent claims now defines the feature, in means plus function form, of increasing plasma density in the vacuum processing chamber. It is respectfully submitted that this serves as a clear distinction over the cited prior art, including the Lenz '356 patent. In particular, the Lenz '356 patent discloses a

confinement ring 18 in column 2, lines 25-29, and column 5, lines 13-16. This confinement ring 18 is also shown in Fig. 2. However, the confinement ring in Lenz '356 only surrounds then upper electrode 10, and clearly does not serve the claimed function of increasing the plasma density in the vacuum processing chamber. Further, none of the other cited references suggests anything which would lead to the complete modification of Lenz '356 to arrive at this claimed structure.

With regard to the claimed structure, attention is directed to the embodiment shown in Fig. 1. of the present application (for purposes of example only). In particular, as can be seen in this embodiment, the discharge confining ring 37 serves as a surrounding wall encircling the inner processing chamber 10 and separating it from the outer chamber 11. This formation of the discharge confining ring as a surrounding wall of the processing chamber 10 permits the discharge confining ring to serve the claimed function of increasing the plasma density inside the vacuum processing chamber 10. Clearly, the confinement ring 18 of Lenz '356 which only surrounds the upper electrode 10, does not serve this same function. Therefore, reconsideration and allowance of the independent claims 8, 10, 19, 21, 27 and 28 and their respective dependent claims, over the various cited references, including the Lenz '356 patent, is respectfully requested.

Further, consideration and allowance of the amended independent claims 8 and 10 and the new dependent claims 29-32 over the cited references is also respectfully requested. These claims define the further functional feature of the present invention (in means plus function format) of the discharge confining means "separating the vacuum processing chamber from the outer chamber." With regard to this, each of these claims previously defines an outer chamber surrounding the

vacuum processing chamber and connected with an evacuation means. This corresponds to the outer chamber 11 shown, for example, in Fig. 1 (which is connected to the vacuum pump 18). As discussed above, by virtue of the structure and location of the discharge confining ring 37, it serves not only to increase the plasma density in the vacuum processing chamber, but also to separate the vacuum processing chamber 10 from the outer chamber 11. Again, clearly the cited prior art fails to teach or suggest this separating feature for a discharge confining ring. Accordingly, reconsideration and allowance of each of the independent claims 8 and 10 and the dependent claims 29-32 for this further reason is also respectfully requested.

Reconsideration and allowance of newly presented dependent claims 33-38 is also respectfully requested. These claims each define, in addition to the above-noted features of the discharge confining means for increasing plasma density and separating the vacuum processing chamber from the outer chamber, the further feature of the discharge confining means being located "for maintaining uniform reaction in the vacuum processing chamber." As noted above, this is supported by the discussion in the specification on page 29, lines 7-10. In addition, this further functional feature of the discharge confining ring is clearly neither taught nor suggested in any of the cited prior art. Therefore, further particular consideration and allowance of these newly submitted dependent claims 33-38 is also respectfully requested.

In summary, the present Amendment submits three new functional features (in means plus function format) for the discharge confining means of the present invention as follows:

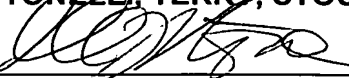
- 1) Increasing the plasma density in the vacuum processing chamber;
- 2) Separating the vacuum processing chamber from an outer chamber which is connected to the evacuation means; and
- 3) Maintaining a uniform reaction in the vacuum processing chamber.

These features, defined in various combinations in the present pending claims, are clearly neither taught nor suggested by any of the cited prior art. These features are also each defined in a means plus function format, such that these features must be considered with regard to these claims under the provisions of 35 USC §112, sixth paragraph. Therefore, full consideration of these three features, and reconsideration and allowance of all of the independent claims 8, 10, 19, 21, 27 and 28, and their respective dependent claims, including the newly submitted dependent claims 29-38, is respectfully requested.

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of either by telephone discussion or by personal interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Antonelli, Terry, Stout & Kraus, LLP Deposit Account No. 01-2135 (Docket No. 520.35237CV4), and please credit any excess fees to such deposit account.

Respectfully submitted,
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By 

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